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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,591	03/25/2004	Dwip N. Banerjee	AUS920031004US1	7128
34533 7590 07/24/2007 INTERNATIONAL CORP (BLF) c/o BIGGERS & OHANIAN, LLP P.O. BOX 1469 AUSTIN, TX 78767-1469			EXAMINER ANDREWS, LEON T	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 07/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/809,591	<b>Applicant(s)</b> BANERJEE ET AL.	
	<b>Examiner</b> Leon Andrews	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) ✓  
Paper No(s)/Mail Date 3-2-04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-21** are rejected under 35 U.S.C. 102(e) as being anticipated by **Firoiu et al.** (Patent No.: US 7,149,664).

**Regarding Claims 1, 8 and 15**, Firoiu et al. discloses a method, apparatus and computer program product for dynamically provisioning computer system resources (method, apparatus and computer program product for modeling dynamics of a queue, column 2, lines 9-11), the method comprising:

monitoring a connection performance parameter of a data communications port (management of a queue at a node in the network, column 1, lines 14-15) operating in a data communications protocol (TCP as the transport layer protocol, column 3, lines 53-54) having a connection backlog queue having a connection backlog queue size (Fig. 13, Queue and Queue Size); and

changing the connection backlog queue size in dependence upon the monitored connection performance parameter without interrupting the operation of the data communications port and without user intervention (Fig. 2, 210, 220 and 230, evaluate the Queue and control functions and make a determination based on traffic conditions).

**Regarding Claims 3, 10 and 17**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises monitoring a connection backlog queue load (Fig. 10, 1020, a maximum value at  $Q_{max}$ ; node receive packets which are stored and queued in a buffer, column 3, lines 38-41); and

changing the connection backlog queue size further comprises changing the backlog queue size in dependence upon the connection backlog queue load (Figs. 10, 1000, 1010, calculate the maximum queue and designate the  $Q_{max}$  to a point above the maximum queue).

**Regarding Claims 4, 11 and 18**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises calculating an average round trip time (calculation of the average round trip time for data to be sent from the first node to the second node and acknowledgement to be received by the first node, column 2, lines 18-21) for a portion of a connection handshake (Fig. 1, link utilization between the first and second nodes, column 2, lines 16-17) and calculating an average arrival interval (Fig. 15, P,I) between connection requests; and

changing the connection backlog queue size further comprises increasing the connection backlog queue size (the queue size is increased when the buffer size is increased, column 1, lines 35-36) if the average arrival interval is less than the average round trip time ((Fig. 15, P, I) < (calculation of the average round trip time for data to be sent from the first node to the second node and acknowledgement to be received by the first node, column 2, lines 18-21)) and decreasing the connection backlog queue size (Fig. 6,  $Q_{min}$ ; decreasing the size of the average queue in the buffer, column 4, line 9-10) if the average arrival interval is greater than the average round trip time ((Fig. 15, P,I) > (calculation of the average round trip time for data to be sent from the first node to the second node and acknowledgement to be received by the first

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node, column 2, lines 18-21)).

**Regarding Claims 5, 12 and 19**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises calculating a bandwidth delay product (resource demand exceeds capacity when data is not sent as quickly as it is received, column 1, lines 20-23) for a connection backlog queue (Fig. 13, Queue and Queue size) and comparing the bandwidth delay product with the queue size (operation point can be compared to the queue size, column 12, lines 31-32); and

changing the connection backlog queue size (Fig. 13; traffic conditions change causing the node to operate in overload outside the normal operating conditions, column 8, lines 1-3) further comprises changing the backlog queue size to at least the bandwidth delay product if the connection backlog queue size is less than the bandwidth delay product ((Fig. 13, Queue and Queue size) < (resource demand exceeds capacity when data is not sent as quickly as it is received, column 1, lines 20-23)).

**Regarding Claims 6, 13 and 20**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises measuring accept processing time (Fig. 15, P, I); and

changing the connection backlog queue size further comprises changing the backlog queue size in dependence upon accept processing time (Fig. 15, variation in the sending rate is reflected in a variation in the queue size, column 11, lines 41-42).

**Regarding Claims 7, 14 and 21**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises calculating an average accept processing time (Fig. 13, amount of data that a link can process in a given time, column 3, lines 34-35) and calculating an average connection request arrival interval (Fig. 15, P, I) for a connection backlog queue (Fig. 13, Queue and Queue size); and

changing the connection backlog queue size further comprises increasing the connection backlog queue size if the accept processing time is greater than the connection request arrival interval ((Fig. 13, amount of data that a link can process in a given time, column 3, lines 34-35) > (Fig. 15, P, I)).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have

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been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2, 9 and 16** are being rejected under 35 U.S.C. 103(a) as being unpatentable in view of Firoiu et al. being an obvious variation. (It is obvious to have “a connection request” interpreted as “a network operation”).

**Claims 2, 9 and 16**, Firoiu et al. discloses a method, apparatus and computer program product of claim 1 wherein:

monitoring a connection performance parameter (management of a queue at a node in the network, column 1, lines 14-15) further comprises receiving a connection request (network operation environment, column 9, lines 59-60) and determining that the connection backlog queue is full (Fig. 2, 230, determine the rate based upon the Queue and the control function; when the queue size exceeds the preset threshold, column 1, lines 50-51); and changing the connection backlog queue size in dependence upon the monitored connection performance parameter further comprises increasing the connection backlog queue size (Figs. 10. 1000, 1010, calculate the maximum queue and designate the  $Q_{max}$  to a point above the maximum queue).

**Regarding Claims 2, 9 and 16**, Firoiu et al. teaches all the claims limitations, but does not explicitly disclose “a connection request”.



However, Firoiu et al. does disclose a network operation environment having a defined set of maximum traffic conditions (column 9, lines 59-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use “a network operation” as “a connection request” since this would have allowed the queue law function to determine the needed buffer size (column 9, lines 58-59).

***Citation of Pertinent Prior Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Creemer** (Patent Number: 5,951,644) discloses system for predicting and managing network performance by managing and monitoring resource utilization and connection of network.

**Skirmont** (Patent Number: US 6,252,848 B1) discloses system performance in a data network through queue management based on ingress rate monitoring.

**Walrand et al.** (Patent No.: US 6,647,413 B1) discloses method and apparatus for measuring performance in packet switched networks.

**Aweya et al.** (Patent No.: US 6,901,593 B2) discloses active queue management with flow proportional buffering.

**Alam et al.** (Patent No.: US 7,069,313 B2) discloses methods and systems for preventing socket flooding during denial of service attacks.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Andrews whose telephone number is (571) 270-1801. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rao S. Seema can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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